

institutions as “mediat[ing] between science and the political, cultural, and economic institutions on which science depends for material and support” (1982, p. 2). Accordingly, Kohler characterized disciplines such as biochemistry, on which he focused, as “political institutions that demarcate areas of academic territory” (p. 1).

Sometimes the emphasis on the roles played by the broader social, cultural, and economic institutions is presented as repudiating the significance of cognitive factors in shaping science (Barnes, 1977; Bloor, 1991; Collins, 1981; Latour & Woolgar, 1979). Such a stance has provoked equally ardent responses from philosophers who have construed any acknowledgment of social factors as undermining the epistemic warrant of science (Laudan, 1981; Kitcher, 2001; and several of the papers in Koertge, 1998). Other philosophers (Longino, 1990; Longino, 2002; Solomon, 2001) have developed a more moderate response, articulating how social factors figure in the intellectual development of science without sacrificing its epistemic warrant. While my sympathies lie with the last position, I will not advance arguments for it here; instead I will briefly discuss how scientists create institutions and how their decisions help shape research in a discipline.

The candidate political institutions of a discipline are academic departments, professional societies, and journals. Of these, departments are the most problematic for tracking scientific disciplines. There are a plethora of ways in which universities divide faculty into departments, often having to do with very local politics and ease of administration. Especially in the biological sciences, the differentiation into departments depends upon the size of the institution and whether the biological sciences are situated among the arts and sciences or in a medical school (or both). Small undergraduate colleges will typically group all the biological disciplines within one department, although they may have separate tracks for majors that correspond to divisions within biology. Research universities tend to have separate departments for different biological disciplines, although they may be grouped in pairs (e.g., cell and molecular biology, ecology and evolution). Although departments may not correspond exactly to disciplinary units as differentiated by such criteria as professional societies and journals, they ensure the historical continuity of disciplines by training subsequent generations of researchers and thereby securing the cognitive and social allegiances of members of a discipline. Richard Whitley commented, “Educational institutions form the basic commitments of scientists in nearly all fields, and constitute the fundamental unit of social and cognitive identity in the sciences, which is one reason why the term ‘discipline’ is usually understood to refer to units of organization in universities” (1980, p. 310).